

Remarks

Claims 1 to 22 remain in this Application.

Claim 1 has been amended to more clearly define the invention. Support for the amendments to Claim 1 can be found throughout the Patent specification, for example on page 15 lines 18 to 21, page 19, lines 22 to 29 and page 27, lines 1 to 23, but more generally from Figures 2, 5, 6, and 7 from the accompanying descriptions. Claim 21 has been amended in a manner similar to Claim 1.

Claim Rejections – 35 USC §102

The Examiner has rejected Claims 1 to 16, 18, 19, 21 and 22 as being anticipated by Enomoto (US 5,923,384). The applicants agree that Enomoto discloses a digital data transmission apparatus which receives payload data arranged in accordance with a framed structure and which comprises a first switching component.

The applicants respectfully disagree with the Examiner that the signal processing devices disclosed in column 4, lines 14 to 21 and column 11, lines 27 to 36 of Enomoto can be regarded as switching components since these devices perform signal processing operations as opposed to switching/routing operations. It is respectfully submitted, therefore, that Enomoto does not disclose the subtending of a second switching component from a first switching component in the manner required by Claim 1.

The applicants also respectfully disagree with the Examiner that Enomoto discloses an adaptation apparatus that adapts received data frames to a reference timing signal. The applicants agree with the Examiner that the Enomoto apparatus different types of signals at the same transmission speed. However, this is not the same as adapting a processed data frame to a reference timing signal. Adaptation to a reference signal is well known in the art and involves the synchronization of incoming data with a local timing reference signal.

Notwithstanding the foregoing, the applicants acknowledge that the overall concept of a low order switching component subtended from a high order switching component, as shown

generally in Figure 2 of the present Application, is known in the art and this is acknowledged by the applicants in the original description of Figure 2.

Two key features of Claim 1 are, first, that the adaptation apparatus advances the payload data of a received and adapted data frame with respect to its normal frame structure and, second, that the second switching component generates an output data frame comprising the advanced payload data in a normal frame structure that is advanced with respect to the received and adapted data frame. These features enable the second switching component to be subtended from the first switching component without the need for a complicated and expensive alignment device between the two.

The applicants respectfully disagree with the Examiner that Enomoto discloses that the payload data of the data frame is advanced with respect to its normal frame structure. Firstly, Enomoto does not disclose the presence of a timing adaptation apparatus that could perform this operation. The applicants agree with the Examiner that the Enomoto apparatus can route two different data formats (SDI and SDDI) by treating each data format as if it were the same, i.e. the SDDI format is sufficiently similar to the SDI format to allow SDDI data to be routed by SDI routing apparatus. As a result, there is no need for Enomoto to advance the payload data of a data frame since both data formats can immediately be routed by the routing apparatus 20. In fact, it would seem counterproductive to advance the payload data of a data frame in the Enomoto invention since this would apparently defeat the purpose of making both data formats similar. Advancing the payload data in the manner stipulated by Claim 1 is necessary because of the way in which the second switching component is subtended from the first switching component. As explained above, the Enomoto apparatus does not include a second switching apparatus subtended from the first switching apparatus as stipulated by Claim 1 and so there is no need for Enomoto to advance the payload data. Accordingly, the applicants respectfully submit that Enomoto does not disclose the advancement of the payload data with respect to its normal frame structure and, moreover, the Enomoto apparatus does not include the means to perform this task, nor is this task required in the Enomoto apparatus.

Claim 1 also stipulates that the second switching component generates an output data frame comprising payload data in a normal frame structure, the data frame being advanced with respect to the received and adapted data frame. The applicants respectfully submit that Enomoto does not disclose this feature. The applicants agree with the Examiner that Enomoto

discloses a data conversion device for converting SDI data to SDDI data. It may be seen from column 14, lines 22 to 24, that the SDI data converted from SDDI data is synchronized to the other SDI signals in the apparatus, i.e. there is no advancement of payload within the data frame. Moreover, there is no requirement in the Enomoto apparatus to advance a data frame created by any of its components, including the devices 30 or routers 20, 40, since there is no need to compensate for delays that are incurred by subtending one switching component from another switching component. Accordingly, it would be counterproductive to advance the output data frame in the Enomoto apparatus.

Accordingly, it is respectfully submitted that Claim 1 is not anticipated by Enomoto in view of the manner in which the second switching component is subtended from the first switching component, but more importantly in view of the advancement of the payload data of a received and adapted data frame with respect to its normal frame structure, and in view of the generation of an output data frame by the second switching component which is advanced with respect to the received and adapted data frame.

With regard to obviousness, the problem that is being addressed by the apparatus of Claim 1, namely to compensate for delays incurred when passing a data frame through a subtended second switching component without using an expensive alignment apparatus, does not arise in the Enomoto apparatus since there is no subtending of a second switch with respect to a first switch in the manner stipulated in Claim 1. Enomoto therefore does not provide a skilled person with any incentive to arrive at the invention of Claim 1. Moreover, it would be counterproductive to attempt to modify the Enomoto apparatus in accordance with Claim 1 since the advancement of payload with respect to data frames, and the advancement of output data frames with respect to received data frames, would appear to destroy the main purpose of the Enomoto apparatus, namely to process two different data formats as if they were the same. Further, the SDI and SDDI data formats disclosed by Enomoto do not comprise high order data structures and low order data structures that would require switching by a high order switch and a low order switch respectfully. Accordingly, there would be no need to subtend a second switching component from a first switching component as stipulated by Claim 1. It is respectfully submitted therefore that Claim 1 is not obvious when compared to the teaching of Enomoto.

United States Patent US 6,014,708 (Klish) relates to the mapping of a payload into a payload envelope in a synchronized network but does not relate to switch subtending and so does not disclose or suggest the apparatus of Claim 1.

With regard to Claim 2, the applicants respectfully disagree that Enomoto discloses that the payload data of a data frame is advanced with respect to the fixed overhead of the data frame. It may be seen from column 4 lines 37 to 41 and from Figures 1 and 2, that in both the SDI and SDDI data formats, the payload data maintains fixed position with respect to the fixed overhead (ANC) data. Moreover, in accordance with Enomoto's teaching, it is instrumental that this is the case in order that the same routing apparatus can route both SDI and SDDI data as if they were the same.

With regard to Claims 3 to 6, the applicants respectfully disagree with the Examiner's comments at paragraph 5 of the examination report. The SDI and SDDI data formats contemplated by Enomoto do not appear to be pointer-based data structures, nor do they appear to include high order data structures and low order data structures that would require the presence of pointers. This may be seen from the data structures illustrated in Figures 1, 2, 3, 4 and 5, none of which include pointers.

With regard to Claim 7, the applicants respectfully refer the Examiner to the comments made above in relation to Claim 1 illustrating that there is no advancement of payload data in the Enomoto apparatus.

With regard to Claims 8 and 9, the applicants wish to emphasize that a key feature of Claim 8 is that the writing and reading of data to and from the memory is controlled by respective independent timing reference signals. This is in contrast to the apparatus disclosed in Figure 9 of Enomoto which uses a single synchronization signal. As indicated above, the applicants respectfully disagree that the SDI data conversion device may be regarded as a switching component.

With regard to Claim 10, the applicants respectfully disagree with the Examiner that the SDDI data conversion device 312 is a switching component or that the SDDI or SDI transmission signals serve as timing reference signals. In the device of Figure 9, the timing reference signal is the frame synchronization signal provided to the frame synchronisation circuit.

With regard to Claims 11 to 12, the applicants respectfully disagree with the Examiner's comments for reasons similar to those made in relation to Claims 8 to 10.

With regard to Claim 13 and 14, the applicants do not understand the Examiner's comments and cannot find disclosure of the features of Claim 13 or Claim 14 anywhere in the Enomoto reference.

With regard to Claims 15 and 16, the applicants respectfully disagree with the Examiner that the control device 20A or 40A is responsible for generating overhead data for the data frames, or that they are responsive to a second timing reference signal and, as indicated above, the data processed by the Enomoto apparatus does not appear to include any pointers or pointer generators.

With regard to Claims 18, 19, 21 and 22, the applicants respectfully refer the Examiner to its comments made in relation to Claim 1.

With regard to Claim 22, the applicants respectfully refer the Examiner to the comments made in relation to Claim 8

Claim Rejections – 35 USC §103

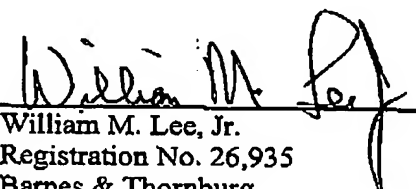
With regard to Claim 17 and 20, as indicated above, the applicants respectfully disagree with the Examiner's assessment of the relevance of the Enomoto document. As such, the applicants respectfully submit that a combination of Enomoto and Klish would not lead a skilled person to the apparatus of Claims 17 or 20.

The applicants respectfully request that a timely Notice of Allowance be issued on this case.

Calls to the Examiner to schedule an interview have not been returned as of this filing. If the application is not allowed, that interview is still requested, and the Examiner is requested to contact the undersigned to arrange for the interview.

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Respectfully submitted,


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